

STRING VARIABLE REVIEW WORKSHEET

String variables must first be dimensioned with a DIM instruction. The dimension statement determines the maximum number of characters which can be held in the string.

1. Type in the following program and RUN it to see what happens.

```
10 REM * A PROGRAM TO DEMONSTRATE
20 REM * THE DIM FUNCTION.
30 REM *
40 DIM FRUIT$(5)
50 FRUIT$ = "APPLE"
60 PRINT FRUIT$
```

2. Note that the word being assigned to the string must be in quotes. If you change APPLE to BANANA, what will be printed on the screen? -----Try it and see.

3. A string variable can contain any combination of letters, numbers, spaces, and symbols. Also, the contents of a string can be assigned from within a program or from input. Type in the following program.

```
10 REM * THIS PROGRAM DEMONSTRATES
20 REM * THE VARIOUS POSSIBLE ELEMENTS
30 REM * OF A STRING FROM INPUT.
40 REM *
50 DIM TIME$(40)
60 PRINT "WHAT TIME IT IT";
70 INPUT TIME$
80 PRINT "IT'S ";TIME$;"! I'M LATE! BYE."
```

4. When you are asked what time it is, type in 10:30 am. and RUN the program.

5. What would be printed out if your typed in ten-thirty?

-----Try it and see.

STRINGS

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***** Comparing Strings *****

```
20 REM *  STRING COMPARISON
80 PRINT "WOULD YOU LIKE TO KNOW HOW LONG"
90 PRINT "ANOTHER WORD IS";
100 INPUT ANSWER$
110 IF ANSWER$="YES" THEN GOTO 50
```

***** Pig Latin Program *****

```
10 REM *  PIG LATIN
20 REM *
30 DIM WORD$(20),ANSWER$(1),CHAR$(1)
40 PRINT "TYPE IN A WORD";
50 INPUT -----
55 PRINT
60 LENGTH = _____(WORD$)
70 CHAR$ = WORD$(____,____);REM CHAR$ IS ASSIGNED THE FIRST ELEMENT
  OF WORD$
80 PRINT "THERE ARE ";_____;" LETTERS IN YOUR WORD."
85 PRINT
90 PRINT WORD$(2);_____;"AY IS YOUR WORD IN PIG LATIN."
95 PRINT
100 PRINT "WOULD YOU LIKE TO KNOW ANOTHER WORD"
110 PRINT "IN PIG LATIN? (TYPE Y OR N.)"
115 PRINT
120 INPUT -----
130 IF ANSWER$ = "Y" THEN GOTO 40
```

STRINGS

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***** Concatenation Programs *****

```
10 REM * STRING CONCATENATION
20 REM *
30 DIM PREFIX$(10),ROOT$(10)
40 PREFIX$ = "TELE"
50 ROOT$ = "VISION"
60 PRINT PREFIX$;ROOT$
```

```
10 REM * CONCATENATE A SUBSTRING
20 REM *
30 DIM ORIGINAL$(10),EXTENSION$(10)
40 ORIGINAL$ = "TELEPHONE"
50 EXTENSION$ = "GRAPH"
60 ORIGINAL$(5,9) = EXTENSION$
70 PRINT ORIGINAL$
```

***** LEN Function Programs *****

```
10 REM * THIS PROGRAM DEMONSTRATES
20 REM * THE LEN FUNCTION
30 REM *
40 DIM WORD$(20)
50 PRINT "TYPE IN A WORD";
60 INPUT WORD$
70 PRINT "THERE ARE ";LEN(WORD$);" LETTERS IN YOUR WORD."
```

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***** String Indexing Programs *****

```
10 REM * INDEX TO A STRING
20 REM
30 DIM NAME$(30)
40 NAME$ = "GEORGE WASHINGTON"
50 PRINT NAME$(1)
60 PRINT NAME$(2)
70 PRINT NAME$(3)
```

```
50 PRINT NAME$(1,1)
60 PRINT NAME$(1,3)
70 PRINT NAME$(5,5)
```

```
100 REM * VARIABLE INDEX
110 REM *
120 GRAPHICS 2 + 16
130 DIM NAME$(20)
140 NAME$ = "JOHN JONES"
150 LENOFNAME = 10
160 FOR CHAR = 1 TO LENOFNAME
170 POSITION CHAR+3,5
180 PRINT #6;NAME$(CHAR,CHAR)
190 FOR DELAY = 1 TO 500: NEXT DELAY
200 NEXT CHAR
```

```
10 REM * A SUBSTRING SWITCH
20 REM *
30 DIM LUNCH$(20)
40 LUNCH$ = "SOUP AND SALAD"
50 PRINT LUNCH$
60 LUNCH$(10,13) = "BREA"
70 PRINT LUNCH$
```

PROGRAMMING CHALLENGES USING STRINGS

1. Write an entire message in Pig Latin. Have a user type in a message in English and you print the message in Pig Latin. Be sure to reserve enough space in a string to input a very long message, in case the user is extremely verbose. Starting with the first letter of the message, compare each element of the string to a space in order to find the break between each word. Each time you encounter a space, convert the previous word to Pig Latin, print in on the screen, and read on. The following BASIC code may prove to be useful to you.

```
FOR LETTER = 1 TO LENGTH
CHAR$ = MESSAGE$(LETTER,LETTER)
IF CHAR$ <> " " THEN WORD$(INDEX,INDEX) = CHAR$
INDEX = INDEX + 1
NEXT LETTER
PRINT WORD$(2); . . .
```

2. Devise your own secret code. Write a program that converts a message typed into the computer into your secret code. One technique for writing a secret code is to switch letters for other letters in the alphabet. For example, all the "A's" could be converted to "Z's." Be creative.

3. Write a program that jumbles up the letters in a word. The jumbled word is printed on the screen. The user is asked to guess what the word is and type the letters of the word in their correct order. Give the user additional guesses for incorrect responses.